Argonne NATIONAL LABORATORY

TRANSFORMING THE FUTURE:

Career Opportunities in Computer Science and Applied Mathematics

Do you want to help develop new technologies for solving our nation's most complex scientific and engineering problems?

We are seeking outstanding people to join us in several challenging areas.

We are seeking outstanding people to join us in the Mathematics and Computer Science Division at Argonne National Laboratory in exploring innovative areas of computer science and applied mathematics – including novel algorithms, analysis techniques embodied in open-source software, data-intensive science, and emerging hardware architectures. As a multidisciplinary national laboratory, Argonne offers an exciting campus atmosphere in which to collaborate on interdisciplinary projects, enabling you to test your applied mathematics and computer science ideas on complex scientific and engineering problems on the world's largest parallel supercomputers.

We have multiple researcher positions at career levels from postdoctoral associates to senior staff researchers and development specialist positions for both junior and senior software developers.

Applied Mathematics Research. The following areas are of special interest:

- Nonlinear optimization, including mixed-integer, multiobjective, stochastic/robust, PDE-constrained, simulation-based, dynamics, derivative-free, and parallel/concurrent optimization
- Machine learning, data analysis, and applied statistics
- Statistical inference and analysis, sampling, and spectral estimation
- Stochastic processes and stochastic differential equations
- Data assimilation and inverse problems
- High-order methods for PDEs/CFD, including spectral element methods
- Numerical linear algebra focusing on highly scalable preconditioners, including matrix-free methods
- Numerical methods for ordinary and partial differential equations, including error estimators and adjoints
- Automatic/algorithmic differentiation

See http://bit.ly/2eZsoRM for more information and to apply.

Computer Science Research. The following areas are of special interest:

- Operating systems, runtime systems, and virtualization
- Distributed systems and services
- Data management, storage, and I/O systems
- Programming models, compilers, program verification
- Data science
- Workflow automation
- Machine learning
- Scientific data analysis/visualization
- Performance analysis, modeling, and optimization

See http://bit.ly/2g8mOPv for more information and to apply.

Software Development Specialists. We are also interested in outstanding software development specialists to help our research teams develop systems software, mathematical libraries, software tools, and computational science applications for high-performance computing. To be qualified, you should have extensive programming experience, excellent software engineering skills, and a demonstrated ability to work as part of a team. Experience with high-performance computing and software maintenance is highly desirable. Other skills are highly desirable for certain research projects, including the following:

- Experience with machine learning algorithms
- Knowledge of compiler design and implementation
- Experience in development of device drivers or other low-level systems software
- Basic understanding of numerical algorithms
- Expertise in particular languages, such as C, python, and Fortran
- Knowledge of performance measurement and evaluation methods and tools
- Experience with cloud computing

See http://bit.ly/2fsPjW5 for more information and to apply.

Openings are available immediately in all these areas, but there is flexibility in start dates for highly qualified candidates. You can find more information on focus areas at Argonne at http://www.mcs.anl.gov/group/applied-mathematics, http://www.mcs.anl.gov/group/extreme-computing, and http://www.mcs.anl.gov/group/data-intensive-science. Feel free to contact members of these groups directly by email with specific questions.

FOR MORE INFORMATION:
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